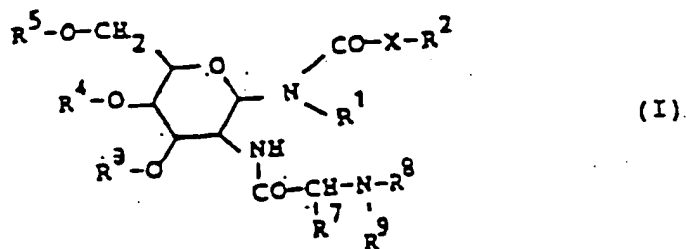


from *Helicobacter* and a compound that promotes induction of a T helper 1-type immune response against *Helicobacter*, said compound being selected from the group consisting of:

6/10/24 (i) a saponin purified from an extract of *Quillaja saponaria*;

6/10/24 (ii) a cationic lipid or a salt thereof, wherein said lipid is a weak inhibitor of protein kinase C and has a structure that comprises a lipophilic group derived from cholesterol, a bonding group selected from carboxyamides and carbamoyls, a spacer arm consisting of a branched or unbranched linear alkyl chain of 1 to 20 carbon atoms, and a cationic amine group selected from primary, secondary, tertiary, and quaternary amines, and said lipid is not provided in the form of a liposome when the composition does not comprise a saponin or a glycolipopeptide of formula (I); and

(iii) a glycolipopeptide of formula (I):



in which

R¹ represents an alkyl group that is saturated or unsaturated once or several times and comprises 1 to 50 carbon atoms;

X represents -CH₂-, -O-, or -NH-;

R² represents a hydrogen atom or an alkyl group that is saturated or unsaturated

once or several times and comprises 1 to 50 carbon atoms;

R³, R⁴, and R⁵ each represent, independently of each other, a hydrogen atom or an acyl-CO-R⁶ group, in which R⁶ represents an alkyl group comprising 1 to 10 carbon atoms;

R⁷ represents a hydrogen atom or a C₁-C₇ alkyl, hydroxymethyl, 1-hydroxyethyl, mercaptomethyl, 2-(methylthio)ethyl, 3-aminopropyl, 3-ureidopropyl, 3-guanidylpropyl, 4-aminobutyl, carboxymethyl, carbamoylmethyl, 2-carboxyethyl, 2-carbamoylethyl, benzyl, 4-hydroxybenzyl, 3-indolylmethyl, or 4-imidazolylmethyl group;

R⁸ represents a hydrogen atom or a methyl group; and

R⁹ represents a hydrogen atom or an acetyl, benzoyl, trichloroacetyl, trifluoroacetyl, methoxycarbonyl, t-butyloxycarbonyl, or benzyloxycarbonyl group.--

--30. The composition of claim 29, wherein R⁷ and R⁸, when taken together, represent a -CH₂-CH₂-CH₂- group.--

--31. The composition of claim 29, comprising a first and a second compound, said first compound being a saponin purified from an extract of *Quillaja saponaria* and said second compound being a cationic lipid or a salt thereof, wherein said lipid is a weak inhibitor of protein kinase C and has a structure that comprises a lipophilic group derived from cholesterol, a bonding group selected from carboxyamides and carbamoyls, a spacer

arm consisting of a branched or unbranched linear alkyl chain of 1 to 20 carbon atoms, and a cationic amine group selected from primary, secondary, tertiary, and quaternary amines.--

--32. The composition of claim 29, wherein the compound is a saponin that is present in the QS-21 fraction purified from a *Quillaja saponaria* extract.--

--33. The composition of claim 29, wherein the compound is a cationic lipid made in the form of a dispersion.--

--34. The composition of claim 29, wherein the compound is the cationic lipid 3-beta-[N-(N',N'-dimethylaminoethane)carbamoyl]cholesterol (DC-chol) or a salt thereof.--

--35. The composition of claim 29, wherein the compound is the glycolipopeptide N-(2-L-leucin-amido-2-deoxy-(-D-glucopyranosyl)N-octadecyl-dodecanoylamide (Bay R1005).--

--36. The composition of claim 29, wherein the immunogenic agent derived from *Helicobacter* is selected from the group consisting of a preparation of inactivated

Helicobacter bacteria, a Helicobacter cell lysate, and a peptide or a polypeptide from Helicobacter in purified form.--

--37. The composition of claim 36, wherein the immunogenic agent derived from Helicobacter comprises the UreB or UreA subunit of Helicobacter urease.--

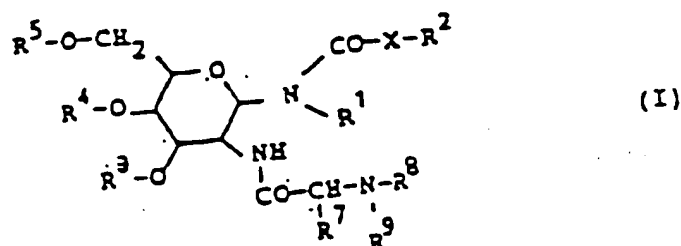
--38. The composition of claim 29, wherein the immunogenic agent derived from Helicobacter is derived from *Helicobacter pylori*.--

--39. A method of inducing a T helper 1-type immune response against Helicobacter in a patient, said method comprising administering to the patient an immunogenic agent derived from Helicobacter and a compound that promotes induction of a T helper 1-type immune response against Helicobacter, said compound being selected from the group consisting of:

- (i) a saponin purified from an extract of *Quillaja saponaria*;
- (ii) a cationic lipid or a salt thereof, wherein said lipid is a weak inhibitor of protein kinase C and has a structure that comprises a lipophilic group derived from cholesterol, a bonding group selected from carboxyamides and carbamoyls, a spacer arm consisting of a branched or unbranched linear alkyl chain of 1 to 20 carbon atoms, and a cationic amine group selected from primary, secondary, tertiary, and quaternary amines,

and said lipid is not provided in the form of a liposome when the composition does not comprise a saponin or a glycolipopeptide of formula (I); and

(iii) a glycolipopeptide of formula (I):



in which

R^1 represents an alkyl group that is saturated or unsaturated once or several times and comprises 1 to 50 carbon atoms;

X represents $-CH_2-$, $-O-$, or $-NH-$;

R^2 represents a hydrogen atom or an alkyl group that is saturated or unsaturated once or several times and comprises 1 to 50 carbon atoms;

R^3 , R^4 , and R^5 each represent, independently of each other, a hydrogen atom or an acyl-CO- R^6 group, in which R^6 represents an alkyl group comprising 1 to 10 carbon atoms;

R^7 represents a hydrogen atom or a C_1 - C_7 alkyl, hydroxymethyl, 1-hydroxyethyl, mercaptomethyl, 2-(methylthio)ethyl, 3-aminopropyl, 3-ureidopropyl, 3-guanidylpropyl, 4-aminobutyl, carboxymethyl, carbamoylmethyl, 2-carboxyethyl, 2-carbamoyl ethyl, benzyl, 4-hydroxybenzyl, 3-indolylmethyl, or 4-imidazolylmethyl group;

R^8 represents a hydrogen atom or a methyl group; and

R⁹ represents a hydrogen atom or an acetyl, benzoyl, trichloroacetyl, trifluoroacetyl, methoxycarbonyl, t-butyloxycarbonyl, or benzyloxycarbonyl group.--

~~--40.~~ The method of claim 39, wherein R⁷ and R⁸, when taken together, represent a -CH₂-CH₂-CH₂- group.--

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~~--41.~~ The method of claim 39, wherein an immunogenic agent derived from *Helicobacter* and two compounds are administered to said patient, said first compound being a saponin purified from an extract of *Quillaja saponaria* and said second compound being a cationic lipid or a salt thereof, said lipid being a weak inhibitor of protein kinase C and having a structure that comprises a lipophilic group derived from cholesterol, a bonding group selected from carboxyamides and carbamoyls, a spacer arm consisting of a branched or unbranched linear alkyl chain of 1 to 20 carbon atoms, and a cationic amine group selected from primary, secondary, tertiary and quaternary amines.--

~~--42.~~ The method of claim 39, wherein the compound is a saponin that is present in the QS-21 fraction purified from a *Quillaja saponaria* extract.--

--43. The method of claim 39, wherein the compound is a cationic lipid made in the form of a dispersion.--

--44. The method of claim 39, wherein the compound is the cationic lipid 3-beta-[N-(N',N'-dimethylaminoethane)-carbamoyl]cholesterol (DC-chol) or a salt thereof.--

~~45.~~ The method of claim 39, wherein the compound is the glycolipopeptide N-(2-L-leucin-amido-2-deoxy-(-D-glucopyranosyl) N-octadecyl-dodecanoylamide (Bay R1005).--

--46. The method of claim 39, wherein the T helper 1-type immune response is measured in mice and is characterized by a ratio of ELISA IgG2a:IgG1 titres that is greater than or equal to 1:20, the IgG2a and IgG1 being immunoglobulins induced against *Helicobacter*.--

--47. The method of claim 46, wherein the T helper 1-type immune response is characterized by a ratio of ELISA IgG2a:IgG1 titres that is greater than or equal to 1:10.--

--48. The method of claim 47, wherein the T helper 1-type immune response is characterized by a ratio of ELISA IgG2a:IgG1 titres that is greater than or equal to 1:2.--

--49. The method of claim 39, wherein the immunogenic agent derived from

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--52. The method of claim 39, wherein the immunogenic agent and the compound are administered to the patient by a systemic route.--

--53. The method of claim 52, wherein the systemic route is the strict systemic route.--

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--55. The method of claim 52, wherein the immunogenic agent and the compound are administered to the patient by a systemic route in the dorsolumbar region of the patient.--

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--56. The method of claim 52, wherein the systemic route is selected from the group consisting of the subcutaneous route, the intramuscular route, and the intradermal route.--

--57. The method of claim 39, wherein the immunogenic agent and the compound are administered to the patient twice or three times by a systemic route during the same treatment.--

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--58. A method of inducing a T helper 1-type immune response against Helicobacter in a patient, said method comprising administering to the patient a compound that promotes induction of a T helper 1-type immune response against Helicobacter in the patient.--
